

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: Gilbert, et al. :

Serial No.: Not Yet Assigned : Group Art Unit: Unknown
Filed: Herewith : Examiner: Not Yet Assigned
For: **METHOD FOR CONTINUOUS VACUUM FORMING SHAPED POLYMERIC ARTICLES**

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Name: Wanda L. Staples

Signature: Wanda L. Staples

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

Sir:

Please amend the above-identified Divisional Application, prior to taking the case up for examination, as follows:

In the Specification:

Please change the title "APPARATUS AND METHOD FOR CONTINUOUS VACUUM FORMING SHAPED POLYMERIC ARTICLES" TO -- APPARATUS FOR CONTINUOUS FORMING SHAPED POLYMERIC ARTICLES --.

After the title, on the next line, insert the following: -- Cross-Reference to Related Application -- and on the following line, insert -- This application is a division of U.S. Patent Application serial number 09/190,038, filed November 12, 1998.

In the claims:

Please amend the claims as follows:

Please cancel claims 1-15.

16. (Unchanged) An apparatus for continuously vacuum forming a shaped polymeric article over a flexible rotating belt, comprising:

- (a) an extruder for producing an extruded sheet of hot polymeric material;
- (b) rotating belt means comprising a drive roller, an idle roller, and a flexible belt suspended over said drive and idle rollers, said flexible belt including a resilient mold belt portion for contacting said extruded sheet, said mold belt portion comprising a plurality of apertures therethrough and a mold impression therein;

- (c) vacuum means for applying vacuum pressure to said extruded sheet through at least said apertures in said mold belt, so as to draw said extruded sheet into intimate

forming contact with said mold impression to form a patterned portion and a remaining portion of said extruded sheet while said polymeric material is still hot;

- (d) cooling means for reducing a temperature of said patterned sheet portion below a heat deflection temperature of said polymeric material;
- (e) shaping means for forming said remaining sheet portion;
- (f) further cooling means for cooling said remaining sheet portion below said heat deflection temperature; and
- (g) cut-off means for severing a length of said extended sheet to produce a shaped polymeric article.

17. (Unchanged) The apparatus of Claim 16 wherein said shaping means (e) comprises a plurality of sizers for mechanically forming edge portions of said sheet while said edge portions are still hot.

18. (Unchanged) The apparatus of Claim 17 wherein at least one of said sizers comprises water cooling for reducing a temperature of said edge portions below the heat deflection temperature of said polymeric material.

19. (Unchanged) The apparatus of Claim 18 further comprising mechanical punching means for producing a plurality of fastener holes in a first edge portion of said sheet.

20. (Unchanged) An apparatus for continuous vacuum forming of a building material component by substantially continuous vacuum forming a polymeric sheet over a flexible rotating belt, comprising:

- (a) an extruder for producing a sheet of hot polymeric material;

(b) rotating belt means comprising a drive roller, an idle roller, and flexible belt means suspended over said drive and idle rollers, said flexible belt means including a resilient mold belt portion for contacting said sheet of hot polymeric material, said mold belt portion comprising a plurality of apertures therethrough and a mold impression therein;

(c) vacuum means for applying vacuum pressure to said sheet of hot polymeric material through said apertures in said mold belt, so as to draw said extruded sheet into intimate forming contact with said mold impression to form a patterned portion and a remaining portion of said sheet;

(d) cooling means for reducing a temperature of said patterned sheet portion below a heat deflection temperature of said polymeric material;

(e) shaping means for forming said remaining sheet portion;

(f) second cooling means for cooling said remaining sheet portion below said heat deflection temperature; and

(g) cut-off means for severing a length of said sheet to produce a shaped polymeric article.

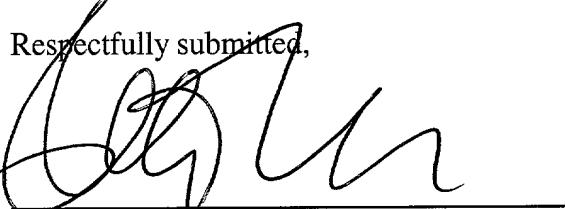
REMARKS

Claims 1-15 have been cancelled. Claims 16-20 are pending in the application.

Applicants request that this Amendment be entered before calculating the filing fees.

The Assistant Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment which may be associated with this communication to deposit account 04-1679.

Dated: 9.28.01

Respectfully submitted,


Peter J. Cronk
Registration No: 32,021
DUANE, MORRIS & HECKSCHER LLP
One Liberty Place
Philadelphia, PA 19103-7396
(215) 979-1000

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please cancel claims 1-15.

16. (Unchanged) An apparatus for continuously vacuum forming a shaped polymeric article over a flexible rotating belt, comprising:
- (a) an extruder for producing an extruded sheet of hot polymeric material;
 - (b) rotating belt means comprising a drive roller, an idle roller, and a flexible belt suspended over said drive and idle rollers, said flexible belt including a resilient mold belt portion for contacting said extruded sheet, said mold belt portion comprising a plurality of apertures therethrough and a mold impression therein;
 - (c) vacuum means for applying vacuum pressure to said extruded sheet through at least said apertures in said mold belt, so as to draw said extruded sheet into intimate forming contact with said mold impression to form a patterned portion and a remaining portion of said extruded sheet while said polymeric material is still hot;
 - (d) cooling means for reducing a temperature of said patterned sheet portion below a heat deflection temperature of said polymeric material;
 - (e) shaping means for forming said remaining sheet portion;
 - (f) further cooling means for cooling said remaining sheet portion below said heat deflection temperature; and
 - (g) cut-off means for severing a length of said extended sheet to produce a shaped polymeric article.

17. (Unchanged) The apparatus of Claim 16 wherein said shaping means (e) comprises a plurality of sizers for mechanically forming edge portions of said sheet while said edge portions are still hot.

18. (Unchanged) The apparatus of Claim 17 wherein at least one of said sizers comprises water cooling for reducing a temperature of said edge portions below the heat deflection temperature of said polymeric material.

19. (Unchanged) The apparatus of Claim 18 further comprising mechanical punching means for producing a plurality of fastener holes in a first edge portion of said sheet.

20. (Unchanged) An apparatus for continuous vacuum forming of a building material component by substantially continuous vacuum forming a polymeric sheet over a flexible rotating belt, comprising:

(a) an extruder for producing a sheet of hot polymeric material;
(b) rotating belt means comprising a drive roller, an idle roller, and flexible belt means suspended over said drive and idle rollers, said flexible belt means including a resilient mold belt portion for contacting said sheet of hot polymeric material, said mold belt portion comprising a plurality of apertures therethrough and a mold impression therein;

(c) vacuum means for applying vacuum pressure to said sheet of hot polymeric material through said apertures in said mold belt, so as to draw said extruded sheet into intimate forming contact with said mold impression to form a patterned portion and a remaining portion of said sheet;

(d) cooling means for reducing a temperature of said patterned sheet portion below a heat deflection temperature of said polymeric material;
(e) shaping means for forming said remaining sheet portion;

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Attorney Docket: D0932-00252

(f) second cooling means for cooling said remaining sheet portion below said heat deflection temperature; and

(g) cut-off means for severing a length of said sheet to produce a shaped polymeric article.